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Magnesium



12

Mg

24.3050(6)



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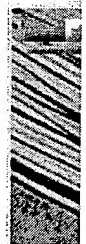


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Li

Na

K



comp
Select
below

Compounds of magnesium:

magnesium (II) fluoride

- Formula as commonly written: MgF_2
- Hill system formula: F_2Mg_1
- CAS registry number: [7783-40-6]
- Formula weight: 62.302
- Class: fluoride

Synonyms

- magnesium (II) fluoride
- magnesium difluoride
- magnesium fluoride

Physical properties

- Colour: white
- Appearance: crystalline solid
- Melting point: 1248°C
- Boiling point: 2239°C
- Density: 3148 kg m^{-3}

Element analysis and oxidation numbers

For each compound, and where possible, a formal oxidation number for each element is given, but the usefulness of this number is limited, especially so for *p*-block elements in particular. Based upon that oxidation number, an electronic configuration is also given but note that for more exotic compounds you should view this as a guide only.

Electron affinities

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Effective nuclear charges

Electron binding energies

Atom radii

Valence shell radii

physical properties

Bulk properties
(density, resistivity, etc.)

Thermal properties
(melting point, etc.)

Thermodynamic properties

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nuclear properties

NMR

Naturally occurring isotopes

Radioisotopes

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chemistry on the
WWW

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Element	%	Formal oxidation state	Formal electronic configuration
F	60.99	-1	[He].2s ² .2p ⁶
Mg	39.01	2	[Ne]

below

Fluor

MgF

Chlor

MgC

Brom

MgB

MgB

Iodide

MgI

Hydri

MgH

Oxide

MgO

MgO

Sulfid

MgS

Selen

MgS

Tellur

MgT

Nitrid

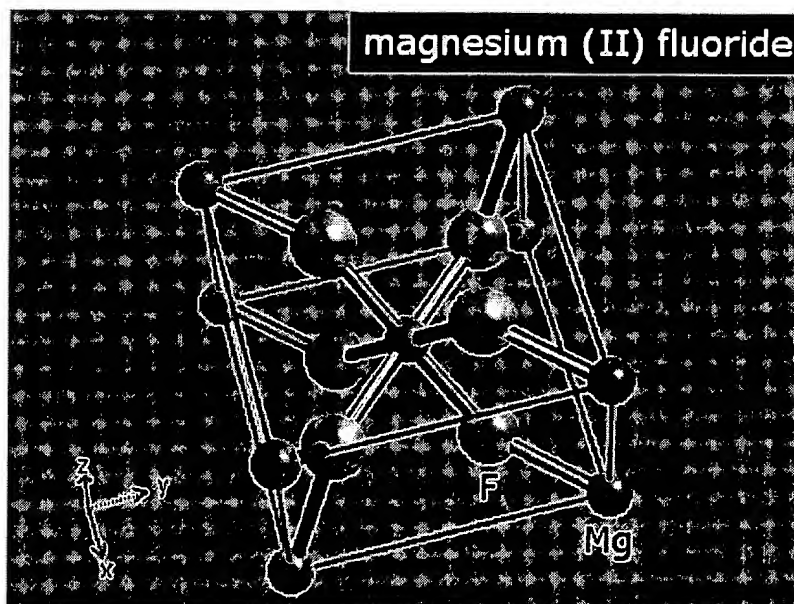
Mg₃

Synthesis

Not available

Solid state structure

- Geometry of magnesium:
- Prototypical structure: TiO₂ (rutile)



Isotope pattern

What follows is the calculated isotope pattern for the MgF₂ unit with the most intense ion set to 100%.

Formula: Mg₁F₂

mass	%
62	100.0
63	12.7
64	13.9


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Magnesium



12

Mg

24.3050(6)



Pic

Swit

Compounds of magnesium:

magnesium (II) oxide

- Formula as commonly written: MgO
- Hill system formula: Mg₁O₁
- CAS registry number: [1309-48-4]
- Formula weight: 40.304
- Class: oxide

Synonyms

- magnesium (II) oxide
- magnesium oxide
- magnesia
- periclase

Physical properties

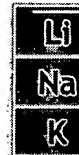
- Colour: white
- Appearance: crystalline solid
- Melting point: 2830°C
- Boiling point: 3600°C
- Density: 3600 kg m⁻³

Element analysis and oxidation numbers

For each compound, and where possible, a formal oxidation number for each element is given, but the usefulness of this number is limited, especially so for *p*-block elements in particular. Based upon that oxidation number, an electronic configuration is also given but note that for more exotic compounds you should view this as a guide only.



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Atom radii

Valence shell radii

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etc.)Thermal properties
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A gallery of orbitals

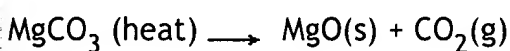
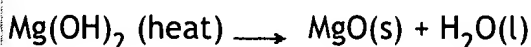
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for more exotic compounds you should view this as a guide only.

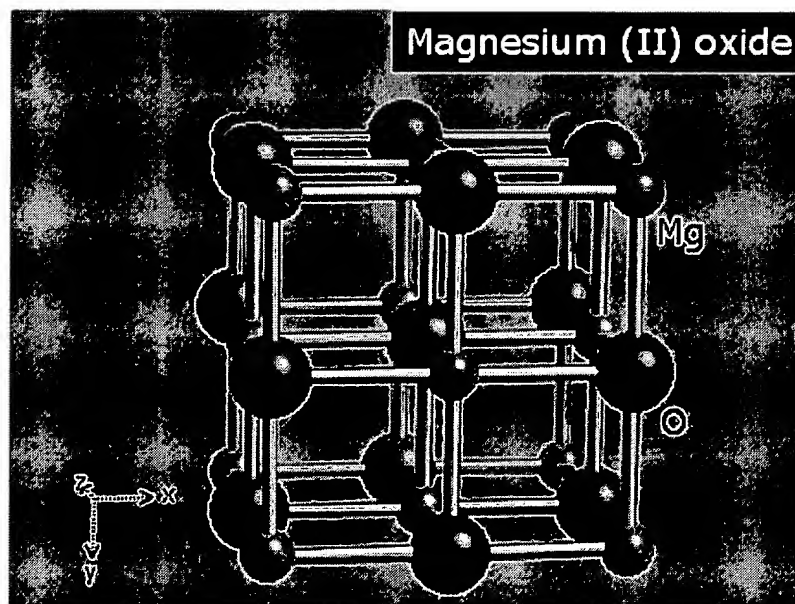
Element	%	Formal oxidation state	Formal electronic configuration
Mg	60.30	2	[Ne]
O	39.70	-2	[He].2s ² .2p ⁶

Synthesis

Magnesium oxide is available from the thermal degradation of magnesium hydroxide or magnesium carbonate.

**Solid state structure**

- Geometry of magnesium: 6 coordinate: octahedral
- Prototypical structure: NaCl (rock salt)

**Isotope pattern**

What follows is the calculated isotope pattern for the MgO unit with the most intense ion set to 100%.

Formula: Mg₁O₁

mass	%
40	100.0

below

Fluor

MgF

Chlor

MgC

Brom

MgB

MgB

Iodide

MgI

Hydri

MgH

Oxide

MgO

MgO

Sulfid

MgS

Selen

MgS

Tellur

MgT


Nitrid

Mg₃

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40	100.0
41	12.7
42	14.1
43	0.0
44	0.0

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Online discussions

Silicon

14
Si
28.0855(3)



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Compounds of silicon:

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Key data; description

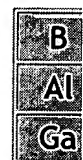
History

silicon (IV) dioxide

- Formula as commonly written: SiO_2
- Hill system formula: O_2Si_1
- CAS registry number: [14808-60-7]
- Formula weight: 60.084
- Class: oxide



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Synonyms

- silicon (IV) dioxide
- silicon dioxide
- silicon oxide
- beta quartz
- quartz



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silicon compounds

Reactions of silicon

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Bond enthalpies

Radii in compounds

Lattice energies

Reduction potentials

Physical properties

- Colour: white
- Appearance: crystalline solid
- Melting point: 1710°C (via transformations starting at 867°C to different silica forms)
- Boiling point: 2590°C
- Density: 2533 kg m^{-3}

electronic properties

Electronic
configuration

Ionization energies

Electron affinities

Element analysis and oxidation numbers

For each compound, and where possible, a formal oxidation number for each element is given, but the usefulness of this number is limited,

Electronegativities

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Valence shell radii

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nuclear properties

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especially so for *p*-block elements in particular. Based upon that oxidation number, an electronic configuration is also given but note that for more exotic compounds you should view this as a guide only.

Element	%	Formal oxidation state	Formal electronic configuration
---------	---	------------------------	---------------------------------

O 53.26

-2

[He].2s².2p⁶

Si 46.74

4

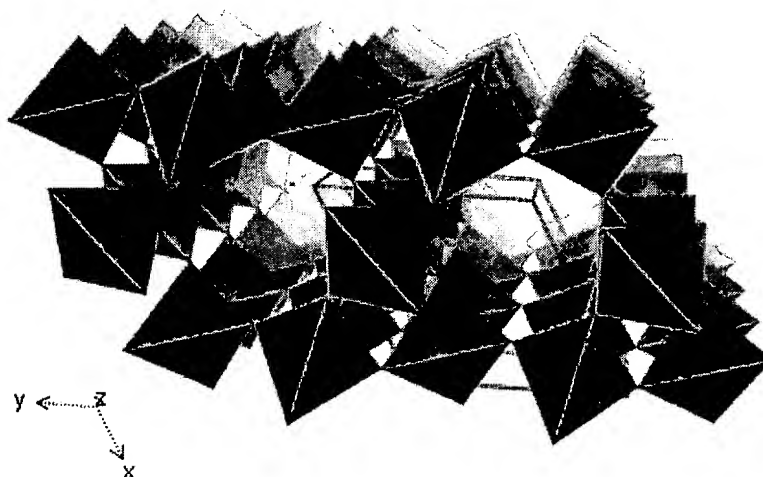
[Ne]

Synthesis

Not available

Solid state structure

- Geometry of silicon: 4 coordinate: tetrahedral
- Prototypical structure:



below

Fluor

SiF

Chlor

SiC

Brom

SiB

IodideSiI₄**Hydri**

SiH

Si₂**Oxide**

SiO

SulfidSiS₂**S len**

non

Tellur

non

NitridSi₃One
silic
life
exis

O

O

O

Vo

Resu

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job in Chemistry

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Isotope pattern

What follows is the calculated isotope pattern for the SiO₂ unit with the most intense ion set to 100%.

Formula: Si₁O₂

mass	%
60	100.0
61	5.1
62	3.8
63	0.0
64	0.0

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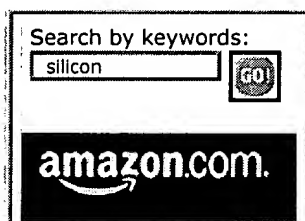
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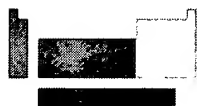
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Online discussions

Aluminium



13

Al

26.981538(2)



Pi

Sw

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aluminium (III) oxide

- Formula as commonly written: Al_2O_3
- Hill system formula: Al_2O_3
- CAS registry number: [1344-28-1]
- Formula weight: 101.961
- Class: oxide



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Synonyms

aluminium compounds

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Radii in compounds

Lattice energies

Reduction potentials

electronic properties

Electronic configuration

Ionization energies

- aluminium (III) oxide
- aluminium oxide
- aluminium oxide (α)
- α -alumina
- α -aluminium oxide
- corundum
- dialuminium trioxide

Physical properties

- Colour: white
- Appearance: crystalline solid
- Melting point: 2054°C
- Boiling point: 3000°C
- Density: 4000 kg m^{-3}

Element analysis and oxidation numbers

For each compound, and where possible, a formal oxidation



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Electron affinities

Electronegativities

Effective nuclear charges

Electron binding energies

Atom radii

Valence shell radii

physical propertiesBulk properties
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etc.)Thermal properties
(melting point, etc.)Thermodynamic
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Crystal structure

[\[view VR world\]](#)[\[view pdb image\]](#)**nuclear properties**

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Naturally occurring
isotopes

Radioisotopes



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For each compound, and where possible, a formal oxidation number for each element is given, but the usefulness of this number is limited, especially so for *p*-block elements in particular. Based upon that oxidation number, an electronic configuration is also given but note that for more exotic compounds you should view this as a guide only.

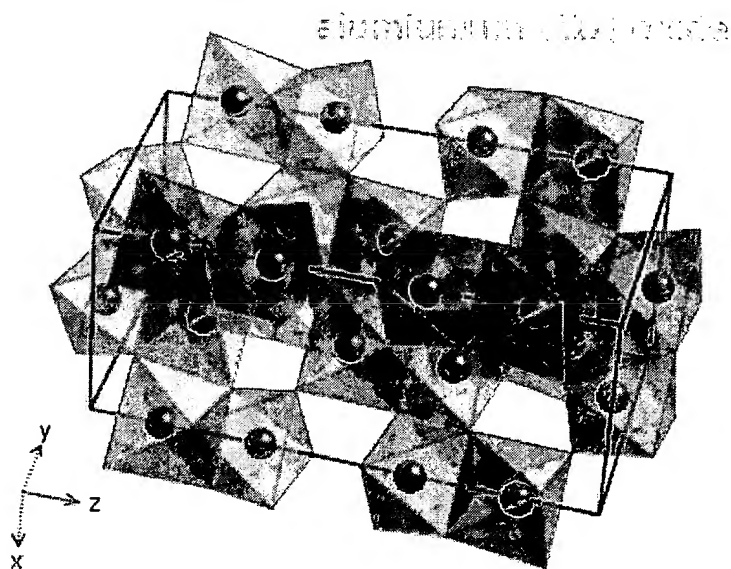
Element	%	Formal oxidation state	Formal electronic configuration
Al	52.93	3	[Ne]
O	47.07	-2	[He].2s ² .2p ⁶

Synthesis

Not available

Solid state structure

- Geometry of aluminium: 6 coordinate: octahedral
- Prototypical structure:

**Isotope pattern**

What follows is the calculated isotope pattern for the Al₂O₃ unit with the most intense ion set to 100%.

Formula: Al₂O₃

mass	%
102	100.0

below

Fluo

Al

Chlo

Al

Al

Brom

Al

[A

Iodid

[A

Hydr

Al

Oxid

Al

Sulfi

Al

Sele

Al

Tellu

Al

Nitri

Al

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sp
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C
C
C
C
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104 0.6

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